UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/850,176	05/07/2001	Sanil Kumar Puthiyandyil	00-472	1245

7590	09/28/2004

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EXAMINER
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ART UNIT	PAPER NUMBER
2155	

DATE MAILED: 09/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/850,176	PUTHIYANDYIL ET AL.
	Examiner	Art Unit
	Asad M Nawaz	2155

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>07 May 2001</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-42* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-13* is/are allowed.

6)☒ Claim(s) *14-42* is/are rejected.

7)☒ Claim(s) *25-26 and 36-37* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 May 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-42 are presented for examination.

2.   Attempts to contact the attorney of record were made on 17th September 2004

without any success.

Drawings

3.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5)

because they include the following reference character(s) not mentioned in the

description: Fig 1, 82, 72, 74; Fig 3 52, 54, 72, 84, 356, etc. Corrected drawing sheets

in compliance with 37 CFR 1.121(d), or amendment to the specification to add the

reference character(s) in the description in compliance with 37 CFR 1.121(b) are

required in reply to the Office action to avoid abandonment of the application. Any

amended replacement drawing sheet should include all of the figures appearing on the

immediate prior version of the sheet, even if only one figure is being amended. The

replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as

per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the

changes are not accepted by the examiner, the applicant will be notified and informed of

any required corrective action in the next Office action. The objection to the drawings

will not be held in abeyance.

4.   Figures 1 and 2 should be designated by a legend such as --Prior Art-- because

only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in

compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid

abandonment of the application. The replacement sheet(s) should be labeled

"Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct

any portion of the drawing figures. If the changes are not accepted by the examiner, the

applicant will be notified and informed of any required corrective action in the next Office

action. The objection to the drawings will not be held in abeyance.

Specification

5.   The disclosure is objected to because it contains an embedded hyperlink and/or

other form of browser-executable code. Applicant is required to delete the embedded

hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

6.   The disclosure is objected to because of the following informalities: There are

many typographical errors where the numerals in the figure do not correctly correspond

to those in the specification. For example, numeral 10 in the specification referring to

an architecture of figure 1 is understood to mean 100. The numerals of figure 4 do not

correspond to those in the specification. For example, in the drawings, numeral 452 is

the M-Bit, whereas the M-Bit is 402.

        Appropriate correction is required.

Claim Rejections - 35 USC § 112

7.   Claim 14 recites the limitation " the second computer network " in line 21 of page

42. There is insufficient antecedent basis for this limitation in the claim.

8.   Claim 35 recites the limitation "the second computer network" in line 16 of page

48. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

Claims 14-24, 27-35, and 38-42 are rejected under 35 U.S.C. 103(a) as being

unpatentable over applicants admitted prior art, hereinafter referred to as "AAPA" further

in view of Townsley et al (*Layer Two Tunneling Protocol "L2TP"*, draft-ietf-pppext-12-tp-

16.txt, June 1999).

As to claim 14, AAPA discloses a method for providing at least one

computational service on a communication link, the method comprising: detecting a call

associated with at least one remote client device in communication with a first network

device over a first communication link; (fig. 1; pg 2, lines 18-21)

establishing a point-to-point communication link from the first network device to a

second network device over a second communication link responsive to detecting the

call associated with the remote client device in communication with the first network

device; (fig. 1; pg 2, lines 18-21)

negotiating computational service parameters with the remote client device from

the second network device. (pg 7, lines 3-12)

implementing the computational service parameters received from the second

network device on a computational service engine associated with the first network

device. (fig 2; pg 7, lines 3-16)

AAPA, however, does not explicitly indicate the transmission of a connection

connect message from the first network device to the second network device, forming a

computational service set up request message on the second network device,

transmitting the computational service set up message from the second network device

to the first network device, forming a computational service set up reply message on the

first network device, and transmitting the computational service set up reply message

from the first network device on the second communication link to the second network

device.

Townsley teaches the L2TP protocol, which extends the PPP model by allowing

the L2 and PPP endpoints to reside on different devices interconnected by a packet-

switched network. Townsley further teaches the necessary setup for tunneling a PPP

session with L2TP, including transmission of a connection connect message over a

communication link comprising "the securing of the identity of the peer, as well as

identifying the peer's L2TP version, framing, and bearer capabilities, etc." Townsley

also teaches ICCNs which may be accompanied with AVPs like last sent CONFEQ, last

received CONFREQ, and RX connect speed. (sections 5.0, 5.1, 5.2, 5.2.1, 5.2.2, 6.9,

6.11)

It would have been obvious for one with ordinary skill in the art at the time the

invention was made to incorporate the teachings of Townsley into those of AAPA.

AAPA discloses the use of the L2TP protocol to implement the methods taught. "An

L2TP tunnel typically provides a conduit for communications between a client device

served by a tunnel initiator and a server device served by tunnel endpoints..."(pg 3,

lines 13-15)

As to claim 15, AAPA teaches a computer readable medium having stored

therein instructions for causing a processor to execute the method of claim 14. (pg 3,

lines 3-12)

As to claim 16, Townsley teaches a connection connect message comprising of

either an ICCN or an OCCN. (5.0, 5.2.1, 5.2.2, 6.9, 6.11)

As to claim 17, Townsley teaches the method of claim 14, wherein the at least

one computational service capability parameter associated with the first network device

is encoded in an AVP format. (4.1, 4.2, 4.3, 4.4, 6.8)

As to claim 18, Townsley teaches the method of claim 14, wherein the

computational service parameters negotiated with the tunnel client device in the

computational service set up request message are encoded in a AVP format (4.1, 4.2,

4.3, 4.4, 5.0, 5.2.1, 5.2.2, 6.9, 6.11)

As to claim 19, Townsley teaches the method of claim 14, wherein the

computational service implementation status parameter is encoded in an AVP format.

(4.1, 4.2, 4.3, 4.4, 5.0, 5.2.1, 5.2.2, 6.9, 6.11)

As to claim 20, AAPA discloses the method of claim 14, wherein the point-to-

point communication link comprises a tunnel communication link. (pg 2, lines 4-10)

As to claim 21, wherein the tunnel communication link comprises one of a Layer 2 Tunneling Protocol communication link and a point-to-point Tunneling protocol communication link. (pg 3, lines 13-18; pg 6, lines 18-21)

As to claim 22, AAPA discloses a method of claim 14, wherein the first network device comprises a tunnel initiator network device, and the second network device comprises a tunnel endpoint network device. (Fig 1, p3, lines 13-18)

As to claim 23, AAPA discloses a method of claim 14, wherein the computational service comprises a computationally intensive service.(pg 7, lines 3-17)

As to claim 24, AAPA discloses a method of claim 14, wherein the computationally intensive service comprises a compression service. (pg 7, lines 3-17)

As to claim 27, AAPA discloses a method of claim 14, wherein the computationally intensive service comprises an encryption service. (pg 7, lines 3-17)

9.   Claims 28-29 rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and Townsley as applied to claim 14 above, and further in view of Mahler et al (US Patent No. 6, 542, 504).

As to claim 28, AAPA and Townsley disclose the method of claim 14 but do not explicitly indicate disabling the at least one computational service on the communication link.

Mahler et al teaches a method for compression of packet header information for packets transmitted on a point-to-point link using L2TP. Mahler further teaches

renegotiating profile options based on performance metrics. (Mahler cols 11-12, lines 45-67 and 1-15)

It would have been obvious for one with ordinary skill in the art at the time the invention was made to incorporate the teachings of Mahler into those of Townsley and AAPA to make the system efficient by shifting the processing burden in a network architecture. (Mahler, col12, lines 8-9)

As to claim 29, Townsley teaches the step of disabling the at least one computational service on the communication link comprising: forming a computational service set up request message on the second network device, the second computational service set up request message comprising a computational service request parameter; transmitting the computational service set up request message from the second network device to the first network device, forming a computational service set up reply message on the first network device upon receiving the computational service set up request message on the first network device, the computational service set up reply message comprising a computational service termination status parameter; and transmitting the computational service set up reply message from the first network device to the second network device. (sections 5.0, 5.1, 5.2, 5.2.1, 5.2.2, 6.9, 6.11)

As to claim 30, Townsley teaches the method of claim 29, wherein the computational service termination request parameter and the computational service termination status parameter are encoded in an AVP format (4.1-4.4)

As to claim 31, Townsley teaches the method of claim 14, further comprising detecting a computational service error on the computational service engine, forming a

computational service reset message on the first network device, and transmitting the

computational service reset message from the first network device to the remote client

device. (1.2, 6.1, 7.1)

As to claim 32, Townsley teaches the method of claim 14, further comprising

detecting a packet error associated with packets received from the first network device

on the second network device over the point-to-point communication link, forming an

error detection message on the second network device, the error detection message

comprising an error detection parameter, and transmitting the error detection message

from the second network device to the first network device. (1.2, 6.1, 7.1)

As to claim 33, Townsley teaches the method of claim 32, wherein the error

detection parameter comprises a reset parameter encoded in an AVP format. (1.2, 6.1,

7.1)

As to claim 34, Townsley teaches the method of claim 33, further comprising

forming a computational service reset request message on the first network device, the

computational service reset request message comprising a computational service reset

parameter and transmitting the computational service reset request message from the

first network device to the remote client device. (5.6, 5.7, 6.12)

As to claim 35, AAPA discloses as prior art a communication system for

offloading at least one computational service on a portion of a point-to-point

communication link, the system comprising: a first network device communicating with

at least one remote client device over the first communication link, the first network

device further coupled to a second communication link, the first network device

configured to establish the point-to-point communication link with a second network

device, wherein the point-to-point communication link includes the first communication

link and the second communication link; (Fig 1, Fig2; pg 2, lines 18-21; pg 3, lines 13-

17; pg 4 lines 11-13; p7, lines 3-12)

And the second network device coupled to the second communication link and

negotiate computational service parameters with the at least one remote client device,

form a computational service set-up request message comprising at least one

negotiated computational service parameter, and transmit the computational service

set-up request message on the second computer network. (Fig 2; pg 3 lines 13-17; pg

7, lines 3-12)

However, AAPA does not explicitly indicate the first network device and

transmitting a connection connect message over the second communication link and

the second network device configured to receive the connection connect message from

the first network device.

Townsley teaches the L2TP protocol, which extends the PPP model by allowing

the L2 and PPP endpoints to reside on different devices interconnected by a packet-

switched network. Townsley further teaches the necessary setup for tunneling a PPP

session with L2TP, including transmission of a connection connect message over a

communication link comprising "the securing of the identity of the peer, as well as

identifying the peer's L2TP version, framing, and bearer capabilities, etc." (sections 5.0,

5.1, 5.2, 5.2.1, 5.2.2)

It would have been obvious for one with ordinary skill in the art at the time the invention was made to incorporate the teachings of Townsley into those of AAPA. AAPA discloses the use of the L2TP protocol to implement the methods taught. "An L2TP tunnel typically provides a conduit for communications between a client device served by a tunnel initiator and a server device served by tunnel endpoints..."(pg 3, lines 13-15)

As to claim 38, AAPA discloses the system of claim 35, wherein the first communication link comprises a communication path on a public switched telephone network and the second communication link comprises a communication path on a packet switched network. (pg 3, lines 18-21; pg 6, lines 3-5 and 9-13)

As to claim 39, AAPA discloses the communication system of claim 35, wherein the point-to-point communication link comprises a tunnel communication link. (pg 6, lines 18-21)

As to claim 40, AAPA discloses the communication system of claim 35, wherein the first network device comprises a tunnel initiator network device and the second network device comprises a tunnel endpoint network device. (fig 1, pg 2, lines 13-21)

As to claim 41, AAPA discloses the communication system of claim 35, wherein the computational service comprises a computationally intensive service. (pg 6, 18-21)

As to claim 42, AAPA discloses the communication system of claim 35, wherein the computationally intensive service comprises a compression service or an encryption service. (pg 6, 18-21)

Claim Objections

10.   Claim 36 is objected to as being dependent upon a rejected base claim, but

would be allowable if rewritten in independent form including all of the limitations of the

base claim and any intervening claims.

11.   Claim 25 is objected to as being dependent upon a rejected base claim, but

would be allowable if rewritten in independent form including all of the limitations of the

base claim and any intervening claims.

Allowable Subject Matter

12.   The following is an examiner's statement of reasons for allowance:

The invention as recited in the independent claim 1 is directed to a method for

providing a predetermined service on a portion of a point-to-point communication link

comprising the reception of a request from a remote client device on a first network

device over a first communication link corresponding to establishment of a point-to-point

communication link between the remote client device and a second network device.

The request is then forwarded from the remote client device to the second network

device from the first network device over a second communication link. The first

network device then transmits a service capability parameter, indicative of the first client

device's capability of supporting the predetermined service, from the first network

device to the second network device. The remote client device and the second

network device negotiate the point-to-point communication link based on the second

network device's service capability parameters. The second network device sends a

negotiated service parameter, associated with the point-to-point communication link, to the first network device. A point-to-point communication link, including the first communication link, is established between the remote client device and the second network device. And finally, the predetermined service is provided between the remote client device and the first network device on the first communication link.

The claim limitation of particular interest is "providing the predetermined service between the remote client device and the first network device on the first communication link." (see claim 1, page 2, lines 3-4) Compression/decompression and encryption/decryption, like many services, would undoubtedly add a heavy computational load on the tunnel endpoints thereby rejecting a high number of user requests. The invention in view of the aforementioned limitation overcomes the data throughput limitations pose by the prior art. More specifically, the claim is allowable over the prior art of record because the prior art does not teach the negotiated/predetermined service being provided over the first communication link.

13.   Claim 14 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Conclusion

14.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Asad M Nawaz whose telephone number is (703) 305-

0094. After 19th October 2004, the examiner can be reached at (571) 272-3988. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on (703) 308-6662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AMN

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